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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,572

11/25/2003

Robert Dean King

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9957

6147 7590 07/11/2008
GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

GLASS, ERICK DAVID

ART UNIT

PAPER NUMBER

2837

NOTIFICATION DATE

DELIVERY MODE

07/11/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/723,572	KING ET AL.	
	Examiner	Art Unit	
	Erick Glass	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/5/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 69-76 is/are pending in the application.
- 4a) Of the above claim(s) 35-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 18, 69, 70 and 72-75 is/are rejected.
- 7) ☒ Claim(s) 2-17, 19-34, 71 and 76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/20/07</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election without traverse of claims 1-34, and 69-76, in the reply filed on 5/5/08 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 18, 69, 70, and 72-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (PGPUB 2002/0158606) in view of King (US 5,589,743).

With respect to claims 1 and 18, King teaches an apparatus for producing tractive effort, said apparatus comprising: an energy source (paragraph 0002) adapted for generating a high DC voltage; a motor drive (fig. 4, 18) adapted for generating a motor voltage from said high DC voltage; and a motor (fig. 4, 16) adapted for producing said tractive effort from said motor voltage, said energy source comprising: a heat engine (paragraph 0002) adapted for generating mechanical power by burning a fuel; an energy battery (fig. 4, 24) adapted for storing and delivering energy derived from said low DC voltage; and a traction boost converter (fig. 4, 34) adapted for boosting said low DC voltage to produce said high DC voltage, said motor drive comprising: a power battery (fig. 4, 48) adapted for storing energy and delivering power at said high DC voltage; and a traction converter (fig. 4, 18) adapted for generating said motor voltage from said high DC voltage during motoring operation and for generating said high DC

voltage from said motor voltage during braking operation (paragraph 0027). King does not specifically teach an alternator adapted for generating an alternating voltage from said mechanical power; a rectifier adapted for rectifying said alternating voltage and producing a low DC voltage.

King teaches an alternator (fig. 1, 22) adapted for generating an alternating voltage from said mechanical power; a rectifier (fig. 1, 26) adapted for rectifying said alternating voltage and producing a low DC voltage. It would have been obvious to one having ordinary skill in the art at the time of the invention to use an alternator and rectifier with the engine, as it is a known method in the field of vehicles and would yield predictable results.

With respect to claims 69, King teaches a first battery (fig. 4, 24) electrically coupled to the rectifier and that is capable of receiving, storing, or receiving and storing the first direct current at the first voltage; a boost converter (fig. 4, 34) electrically coupled to the first battery and that is capable of boosting the first voltage to a second voltage that is a relatively higher voltage than the first voltage; a second battery (fig. 4, 48) electrically coupled to the boost converter, and that is capable of receiving the second voltage, and that is capable of receiving, storing, or receiving and storing the second voltage; and a traction converter (fig. 4, 18) electrically coupled to the second battery and to a motor, and the traction converter is capable of receiving from the second battery the second voltage, and of supplying a motor voltage to the motor during a first mode of operation, and the traction converter is further capable of receiving from the motor the motor voltage, and of supplying the second voltage to the second battery

during a second mode of operation (paragraph 0027). King does not specifically teach a rectifier electrically coupled to an alternating current energy source that is capable of rectifying alternating current and further capable of producing a first direct current having a first voltage.

King teaches a rectifier (fig. 1, 26) electrically coupled to an alternating current energy source (fig. 1, 22) that is capable of rectifying alternating current and further capable of producing a first direct current having a first voltage. It would have been obvious to one having ordinary skill in the art at the time of the invention to use an alternator and rectifier with the engine, as it is a known method in the field of vehicles and would yield predictable results.

With respect to claims 70, King teaches a first battery (fig. 4, 24); a boost converter (fig. 4, 34) electrically coupled to the first battery and that is capable of boosting the first voltage to a second voltage that is a relatively higher voltage than the first voltage; and a second battery (fig. 4, 48) electrically coupled to the boost converter, and that is capable of receiving the second voltage, and that is capable of receiving, storing, or receiving and storing the second voltage.

King teaches an AC/DC rectifier (fig. 1, 26) and that is capable of receiving, storing, or receiving and storing a first direct current at a first voltage. It would have been obvious to one having ordinary skill in the art at the time of the invention to use an alternator and rectifier with the engine, as it is a known method in the field of vehicles and would yield predictable results.

With respect to claim 72, King teaches wherein the first battery has a higher energy density than the second battery (paragraph 0026-0027).

With respect to claim 73, King teaches wherein the first direct current voltage is high voltage (paragraph 0021).

With respect to claim 74, King teaches wherein the first mode of operation is a motoring operation (paragraph 0007-0008).

With respect to claim 75, King teaches wherein the second mode of operation is a dynamic braking operation (paragraph 0007-0008).

Claims 2-17, 19-34, 71, and 76, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

The term "about" in claim 2, 3, 19, 20 and "relatively" in claim 69 is a relative term which renders the claim indefinite. The term "about" and "relatively" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

A period is missing from the end of claim 74, and claim 76 has an extra "a".
Please correct.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Glass whose telephone number is (571)272-8395. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EG
/Lincoln Donovan/
Supervisory Patent Examiner, Art Unit 2837